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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/829,232	04/22/2004	Atsushi Nishioka	249-338	7131
23117	7590	05/17/2005		EXAMINER
NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203				HSIEH, SHIH WEN
			ART UNIT	PAPER NUMBER
			2861	

DATE MAILED: 05/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/829,232	NISHIOKA, ATSUSHI	
	<b>Examiner</b>	<b>Art Unit</b>	
	Shih-wen Hsieh	2861	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 22 April 2004.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 21-40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 21-40 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 22 April 2004 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. 10/303,087.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 4-22-04.
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_\_.

## DETAILED ACTION

### ***Double Patenting***

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 21-40 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-20 of U.S. Patent No. 6,746,098 B2. Although the conflicting claims are not identical, they are not patentably distinct from each other because both cases deal with a maintenance mechanism for a print head with only minor changes in the terminology (i.e., subject matters). Below is a table of comparison, which tabulates claims from both cases to show their similarities. Where the changes in terminology in the instant application are hi-lighted:

<u>10/829,232</u>	<u>6,746,098 B2</u>
21. A maintenance mechanism for a print head having a nozzle surface in	1. A maintenance mechanism for a print head having a nozzle surface in

<p>which are formed a plurality of nozzles, comprising: a head cap, reciprocally movable between a capping position for covering the nozzles and a retracted position separated from the nozzle surface; a pump, connected to the head cap; a drive source; a <b>transmission member</b>, rotated by the drive source to drive the pump; a <b>cam</b>, reciprocally rotatable between a first position and a second position to reciprocally move the head cap; and a <b>clutch</b>, which rotates the cam together with the transmission member, but rotates only the transmission member when the reaches each one of the first position and the second position.</p>	<p>which are formed a plurality of nozzles, comprising: a head cap, reciprocally movable between a capping position for covering the nozzles and a retracted position separated from the nozzle surface; a pump, connected to the head cap; a drive source; a <b>pump gear</b>, rotated by the drive source to drive the pump; a <b>cylindrical cam</b>, reciprocally rotatable between a first position and a second position to reciprocally move the head cap; and a <b>frictional clutch</b>, which rotates the cylindrical cam together with the pump gear, but rotates only the pump gear when the cylindrical cam reaches each one of the first position and the second position.</p>
<p>22. The maintenance mechanism as set forth in claim 21, wherein: a cam groove is formed on an outer peripheral surface of the cam in a predetermined circumferential angular range and the maintenance mechanism further comprises a cap driving pin slidably movable along the cam groove to reciprocally move the head cap.</p>	<p>2. The maintenance mechanism as set forth in claim 1, wherein: a cam groove is formed on an outer peripheral surface of the cylindrical cam in a predetermined circumferential angular range and the maintenance mechanism further comprises a cap driving pin slidably movable along the cam groove to reciprocally move the head cap.</p>
<p>23. The maintenance mechanism as set forth in claim 21, wherein: a first engagement member and a second engagement member are provided with the cam, and a third engagement member is disposed at a predetermined position; and a rotation of the cam in a first direction is stopped when the first engagement member engages with the third engagement member, and a rotation of the in a second direction is stopped when the second engagement member engages with the third engagement member.</p>	<p>14. The maintenance mechanism as set forth in claim 1, wherein: a first engagement member and a second engagement member are provided with the cylindrical cam, and a third engagement member is disposed at a predetermined position; and a rotation of the cylindrical cam in a first direction is stopped when the first engagement member engages with the third engagement member, and a rotation of the cylindrical cam in a second direction is stopped when the second engagement member engages with the third engagement member.</p>
<p>24. The maintenance mechanism as</p>	<p>3. The maintenance mechanism as set</p>

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set forth in claim 22, wherein a rotation of the cam in a first direction is stopped when the cap driving pin reaches at a first dead end of the cam groove, and a rotation of the cam in a second direction is stopped when the cap driving pin reaches at a second dead end of the cam groove.	forth in claim 2, wherein a rotation of the cylindrical cam in a first direction is stopped when the cap driving pin reaches at a first dead end of the cam groove, and a rotation of the cylindrical cam in a second direction is stopped when the cap driving pin reaches at a second dead end of the cam groove.
25. The maintenance mechanism as set forth in claim 23, wherein the transmission member and the are coaxially arranged.	15. The maintenance mechanism as set forth in claim 14, wherein the pump gear and the cylindrical cam are coaxially arranged.
26. The maintenance mechanism as set forth in claim 25, wherein the clutch includes an urging member which presses one circular end surface of the transmission member and one circular end surface of the cam together.	16. The maintenance mechanism as set forth in claim 15, wherein the frictional clutch includes an urging member which presses one circular end surface of the pump gear and one circular end surface of the cylindrical cam together.
27. The maintenance mechanism as set forth in claim 23 wherein the pump is a tube pump which performs a sucking operation only when the cam is rotated in either one of the first direction and the second direction.	17. The maintenance mechanism as set forth in claim 14 wherein the pump is a tube pump which performs a sucking operation only when the cylindrical cam is rotated in either one of the first direction and the second direction.
28. The maintenance mechanism as set forth in claim 22, wherein the head cap includes: a cap body having an opening which faces the nozzle surface; a cap holder, which holds the cap body; an urging member, disposed in the cap holder to urge the cap body in a direction that the cap body is projected from the cap holder; and a vent valve, closed when the cap body of the head cap placed at the capping position is pushed toward the cap holder by a predetermined amount against an urging force of the urging member, so that an interior space of the head cap is isolated from atmosphere.	4. The maintenance mechanism as set forth in claim 2, wherein the head cap includes: a cap body having an opening which faces the nozzle surface; a cap holder, which holds the cap body; an urging member, disposed in the cap holder to urge the cap body in a direction that the cap body is projected from the cap holder; and a vent valve, closed when the cap body of the head cap placed at the capping position is pushed toward the cap holder by a predetermined amount against an urging force of the urging member, so that an interior space of the head cap is isolated from atmosphere.
29. The maintenance mechanism as	5. The maintenance mechanism as set

<p>set forth in claim 28, wherein the cam groove includes: a first portion which moves the cap driving pin so as to place the cap holder at a first capping position where the cap body covers the nozzles and the vent valve is closed; and a second portion which moves the cap driving pin so as to place the cap holder at a second capping position where the cap body covers the nozzles and the vent valve is opened.</p>	<p>forth in claim 4, wherein the cam groove includes: a first portion which moves the cap driving pin so as to place the cap holder at a first capping position where the cap body covers the nozzles and the vent valve is closed; and a second portion which moves the cap driving pin so as to place the cap holder at a second capping position where the cap body covers the nozzles and the vent valve is opened.</p>
<p>30. The maintenance mechanism as set forth in claim 29, wherein: the cam groove includes a guide portion which guides the cap driving pin situated in the first portion to the second portion; and wherein the cap driving pin situated in the vicinity of one end of the first portion is guided to the second portion via the guide portion, when the cap driving pin is moved away from the one end of the first portion.</p>	<p>6. The maintenance mechanism as set forth in claim 5, wherein: the cam groove includes a guide portion which guides the cap driving pin situated in the first portion to the second portion; and wherein the cap driving pin situated in the vicinity of one end of the first portion is guided to the second portion via the guide portion, when the cap driving pin is moved away from the one end of the first portion.</p>
<p>31. The maintenance mechanism as set forth in claim 30, wherein: the first portion includes a depth-decreasing portion in which a depth thereof gradually decreases toward the one end thereof; and the guide portion connects a part in the first portion in the vicinity of the depth-decreasing portion and the second portion.</p>	<p>7. The maintenance mechanism as set forth in claim 6, wherein: the first portion includes a depth-decreasing portion in which a depth thereof gradually decreases toward the one end thereof; and the guide portion connects a part in the first portion in the vicinity of the depth-decreasing portion and the second portion.</p>
<p>32. The maintenance mechanism as set forth in claim 22, wherein the cam groove is one continuous groove, and the predetermined circumferential angular range is 360 degrees or less.</p>	<p>8. The maintenance mechanism as set forth in claim 2, wherein the cam groove is one continuous groove, and the predetermined circumferential angular range is 360 degrees or less.</p>
<p>33. The maintenance mechanism as set forth in claim 21 further comprising an intermittent gear arranged coaxially with the cam, so as to rotate integrally with the cam, wherein a driving force of the drive source is transmitted to the intermittent gear only in a predetermined circumferential angular</p>	<p>19. The maintenance mechanism as set forth in claim 1 further comprising an intermittent gear arranged coaxially with the cylindrical cam, so as to rotate integrally with the cylindrical cam, wherein a driving force of the drive source is transmitted to the intermittent gear only in a predetermined</p>

range of the cam between the first position and the second position.	circumferential angular range of the cylindrical cam between the first position and the second position.
34. The maintenance mechanism as set forth in claim 22, further comprising: a wiper, reciprocally movable between a wiping position for wiping the nozzle surface and a standby position; and a wiper driving pin, slidably moving along the cam groove to reciprocally move the wiper, wherein the cam groove includes: a first dead end portion, at which the wiper driving pin is placed when a rotation of the cylindrical cam in a first direction is stopped; a wiper driving portion, continued from the first dead end portion, which moves the wiper driving pin to reciprocally move the wiper; a second dead end portion, at which the cap driving pin is placed when a rotation of the cylindrical cam in a second direction is stopped; and a cap driving portion, continued from the second dead end portion, which moves the cap driving pin to reciprocally move the head cap.	9. The maintenance mechanism as set forth in claim 2, further comprising: a wiper, reciprocally movable between a wiping position for wiping the nozzle surface and a standby position; and a wiper driving pin, slidably moving along the cam groove to reciprocally move the wiper, wherein the cam groove includes: a first dead end portion, at which the wiper driving pin is placed when a rotation of the cylindrical cam in a first direction is stopped; a wiper driving portion, continued from the first dead end portion, which moves the wiper driving pin to reciprocally move the wiper; a second dead end portion, at which the cap driving pin is placed when a rotation of the cylindrical cam in a second direction is stopped; and a cap driving portion, continued from the second dead end portion, which moves the cap driving pin to reciprocally move the head cap.
35. The maintenance mechanism as set forth in claim 34, wherein the pump is a tube pump which performs a sucking operation only when the cam is rotated in the second direction.	10. The maintenance mechanism as set forth in claim 9, wherein the pump is a tube pump which performs a sucking operation only when the cylindrical cam is rotated in the second direction.
36. The maintenance mechanism as set forth in claim 27, wherein the pump is arranged coaxially with the cam.	18. The maintenance mechanism as set forth in claim 17, wherein the pump is arranged coaxially with the cylindrical cam.
37. The maintenance mechanism as set forth in claim 35, wherein the pump is arranged coaxially with the cam.	11. The maintenance mechanism as set forth in claim 10, wherein the pump is arranged coaxially with the cylindrical cam.
38. The maintenance mechanism as set forth in claim 22, further comprising an urging member which urges the cap driving pin toward a bottom surface of	13. The maintenance mechanism as set forth in claim 2, further comprising an urging member which urges the cap driving pin toward a bottom surface of

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the cam groove.	the cam groove.
39. The maintenance mechanism as set forth in claim 34, further comprising an intermittent gear arranged coaxially with the cam, so as to rotate integrally with the cam, wherein a driving force of the drive source is transmitted to the intermittent gear only in a predetermined circumferential angular range of the cam between the first dead end portion and the second dead end portion of the cam groove.	12. The maintenance mechanism as set forth in claim 9, further comprising an intermittent gear arranged coaxially with the cylindrical cam, so as to rotate integrally with the cylindrical cam, wherein a driving force of the drive source is transmitted to the intermittent gear only in a predetermined circumferential angular range of the cylindrical cam between the first dead end portion and the second dead end portion of the cam groove.
40. An ink jet printer comprising the maintenance mechanism as set forth in claim 21.	20. An ink jet printer comprising the maintenance mechanism as set forth in claim 1.

In light of the table above:

A pump gear is changed to a transmission member in the instant application, which is broader than the original specific term "pump gear".

A cylindrical cam is changed to a cam in the instant application, which is also broader than the original specific term "cylindrical cam".

A frictional clutch is changed to a clutch, which is also broader than the original specific term "frictional clutch".

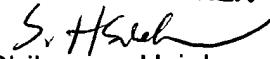
Therefore, all of the subject matters and limitations in the instant application are obvious over those in patent 6,746,098 B2.

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shih-wen Hsieh whose telephone number is 571-272-2256. The examiner can normally be reached on 7:30AM -5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Talbott can be reached on 571-272-1934. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

**SHIH-WEN HSIEH  
PRIMARY EXAMINER**

  
Shih-wen Hsieh  
Primary Examiner  
Art Unit 2861

SWH  
  
May 13, 2005